

# **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Area FUEL Machine Id 438 Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (42 QTS)

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

## Fluid Condition

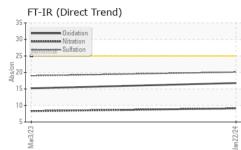
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

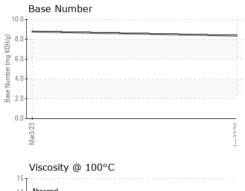
			11 1.0	Jan2024		
SAMPLE INFORI	VIATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0109581	PCA0066605	
Sample Date		Client Info		22 Jan 2024	03 Mar 2023	
Machine Age	mls	Client Info		350132	332993	
Oil Age	mls	Client Info		16000	12000	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	20	10	
Chromium	ppm	ASTM D5185m	>6	<1	<1	
Nickel	ppm	ASTM D5185m	>3	0	0	
Titanium	ppm	ASTM D5185m		0	<1	
Silver	ppm	ASTM D5185m	>2	0	0	
Aluminum	ppm		>50	6	5	
Lead	ppm	ASTM D5185m	>10	0	0	
Copper	ppm		>50	2	2	
Tin	ppm	ASTM D5185m	>6	0	0	
Vanadium	ppm	ASTM D5185m	20	0	<1	
Cadmium	ppm	ASTM D5185m		0	0	
			limit/baco			history?
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	method ASTM D5185m	2	current 6	history1 8	
Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0	current 6 0	history1 8 0	
Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 6 0 65	history1 8 0 63	
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 6 0 65 0	history1 8 0 63 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 6 0 65 0 1062	history1 8 0 63 <1 937	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	Current 6 0 65 0 1062 1207	history1 8 0 63 <1 937 1139	   
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	Current 6 0 65 0 1062 1207 1084	history1 8 0 63 <1 937 1139 985	   
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180	Current 6 0 65 0 1062 1207 1084 1332	history1 8 0 63 <1 937 1139 985 1262	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600	Current 6 0 65 0 1062 1207 1084	history1  8  0  63  <1  937  1139  985  1262  3357	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	Current 6 0 65 0 1062 1207 1084 1332	history1         8         0         63         <1         937         1139         985         1262         3357         history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600	current           6           0           65           0           1062           1207           1084           1332           3696           current           4	history1         8         0         63         <1         937         1139         985         1262         3357         history1         3	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	current 6 0 65 0 1062 1207 1084 1332 3696 current	history1         8         0         63         <1         937         1139         985         1262         3357         history1         3         <1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >50	current           6           0           65           0           1062           1207           1084           1332           3696           current           4	history1         8         0         63         <1         937         1139         985         1262         3357         history1         3	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >50	current           6           0           65           0           1062           1207           1084           1332           3696           current           4           1	history1         8         0         63         <1         937         1139         985         1262         3357         history1         3         <1	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >50	current           6           0           65           0           1062           1207           1084           1332           3696           current           4           1           1	history1         8         0         63         <1         937         1139         985         1262         3357         history1         3         <1         2	     history2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >50 >20 <b>Imit/base</b>	current         6         0         65         0         1062         1207         1084         1332         3696         current         4         1         1         current	history1         8         0         63         <1         937         1139         985         1262         3357         history1         3         <1         2         history1	    history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >50 >20 <b>limit/base</b>	current         6         0         65         0         1062         1207         1084         1332         3696         current         4         1         current         0.5	history1         8         0         63         <1         937         1139         985         1262         3357         history1         3         <1         2         history1         0.4	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >50 >20 <i>imit/base</i> >3 >20	current         6         0         65         0         1062         1207         1084         1332         3696         current         4         1         current         0.5         9.1	history1         8         0         63         <1         937         1139         985         1262         3357         history1         3         <1         2         history1         0.4         8.3	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method         ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >50 >20 imit/base >3 >20 >30	current         6         0         65         0         1062         1207         1084         1332         3696         current         4         1         current         0.5         9.1         20.1	history1         8         0         63         <1         937         1139         985         1262         3357         history1         3         <1         2         history1         0.4         8.3         19.0	    history2  history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method         ASTM D5185m         ASTM D7844         *ASTM D7624         *ASTM D7415         method	2 0 50 0 950 1050 995 1180 2600 imit/base >50 >20 imit/base >3 >20 >30	current         6         0         65         0         1062         1207         1084         1332         3696         current         4         1         current         0.5         9.1         20.1	history1         8         0         63         <1         937         1139         985         1262         3357         history1         3         <1         2         history1         0.4         8.3         19.0         history1	    history2  history2  history2

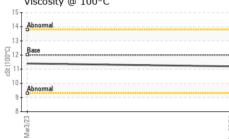


# **OIL ANALYSIS REPORT**

VISUAL







	e e e le r	*\/:		NONE	NONE		
White Metal	scalar	*Visual	NONE	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE	NONE		
Precipitate	scalar	*Visual *Visual	NONE	NONE NONE	NONE		
Silt Debris	scalar	*Visual					
	scalar		NONE	NONE	NONE		
Sand/Dirt	scalar	*Visual *Visual	NONE NORML	NORML	NONE		
Appearance Odor	scalar scalar	*Visual	NORML	NORML	NORML		
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG		
Free Water	scalar	*Visual	>0.2	NEG	NEG		
			l'as 1 //s a s a				
FLUID PROPE		method	limit/base		history1	history	
Visc @ 100°C	cSt	ASTM D445	12.00	11.2	11.4		
GRAPHS							
Iron (ppm)				Lead (ppm)			
00 - Severe				20 - Severe			
00 Abnormal			ε	15-			
			mdd	10 - Abnormal			
00				5			
			24				
Mar3/23			Jan 22/24	Mar3/23			
Aluminum (ppm)			7	Chromium (p	pm)		
00 Severe				12 Severe	. ,		
80 -				10 - devele			
60 Abnormal			mdd	6 Abnormal			
40				4			
20 -				2			
23 <sup>23</sup>			24+				
Mar3/23			Jan 22/24	Mar3/23			
Copper (ppm)			-	Silicon (ppm)			
00 Severe				80 Severe			
80				60 - Abnormal			
<sup>60</sup> Abnormal			udd				
40				20			
20							
Mar3/23			2/24	Mar3/23			
12			22	52			
Mar			Jan 22/24	Mar			

10.0

6.0

2.0 0.0

Mar3/73

(mg KOH/g) 8.0

umber 4.0 Base Nu

Jan22/24 -

: 03 Apr 2024

: 04 Apr 2024

# 

Unique Number : 10957100 Diagnosed : 04 Apr 2024 - Wes Davis US 02780 Test Package : MOB 2 Contact: GREG DUNKER Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (617)889-6422

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received

Tested

16

1. St (100°C)

12

8

Lab Number : 06137635

Laboratory Sample No. Mar3/23

Abnorm

: PCA0109581

DENNIS K BURKE INC - INTERNAL SAMPLES

555 CONSTITUTION DR

TAUNTON, MA

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